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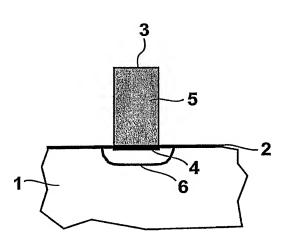
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[Continued on next page]

(54) Title: SEMICONDUCTOR DEVICE COMPRISING A PN-HETEROJUNCTION



(57) Abstract: An electric device is disclosed comprising a pn-heterojunction (4) formed by a nanowire (3) of 111-V semiconductor material and a semiconductor body (1) comprising a group IV semiconductor material. The nanowire (3) is positioned in direct contact with the surface (2) of the semiconductor body (1) and has a first conductivity type, the semiconductor body (1) has a second conductivity type opposite to the first conductivity type, the nanowire (3) forming with the semiconductor body (1) a pn-heterojunction (4). The nanowire of III-V semiconductor material can be used as a diffusion source (5) of dopant atoms into the semiconductor body. The diffused group III atoms and/or the group V atoms from the III-V material are the dopant atoms forming a region (6) in the semiconductor body in direct contact with the nanowire (3).

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